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(Amended) The collection of claim 27, wherein at least about 70% of all possible oligonucleotide sequences having the same number of nucleotides are each attached to a different single bead.

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9 34. (Amended) The collection of claim 27, wherein at least 10,000 of all the possible oligonucleotide sequences having the same number of nucleotides are each attached to a different single bead.

(Amended) The collection of claim 27, wherein at least 100,000 of all the possible oligonucleotide sequences having the same number of nucleotides are each attached to a different single bead.

(Amended) The collection of claim 27, wherein at least 1,000,000 of all the possible oligonucleotide sequences having the same number of nucleotides are each attached to a different single bead.

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38. (Amended) The collection of claim 26, wherein the polymer is a protein selected from the group consisting of proteins having enzyme binding sites and proteins having antibody binding sites.

39. (Amended) The collection of claim 26, wherein the beads are comprised of a glass surface and the polymers are attached through amines on the glass surface.

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40. (Amended) The collection of claim 26 wherein the beads are comprised of a surface and the polymers are attached through hydroxyl groups on the surface.

41. (Amended) The collection of claim 26, wherein the polymers are oligodeoxyribonucleotides, a plurality of the beads are comprised of a surface and a coating of an organic hydrophilic layer terminating in hydroxyl groups, and phosphates of the oligodeoxyribonucleotides are immediately linked to the hydroxyl groups.

51. (Amended) The collection of claim 26, wherein the polymer is selected from the group consisting of proteins having enzyme binding sites and proteins having antibody binding sites.

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2/58. (Amended) The collection of claim 27, wherein a plurality of the different beads are reusable; thereby allowing specific interactions between the polymer attached to a single bead and its target to be disrupted and the single bead treated, whereby a renewed plurality of beads equivalent to an unused plurality of beads is made by such treatment.